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ABSTRACT

Contained in the annotated bibliography are 73 references to research dealing with creativity and gifted children. Research covers such aspects as academic achievement, cognitive processes, creative thinking, individual characteristics, personality, student attitudes, teaching methods, testing, and program evaluation. The bibliography is one in a series of over 50 similar listings on handicapped and gifted children. For each of the entries, which were selected from Exceptional Child Education Abstracts, bibliographic data, availability information, indexing and retrieval descriptors, and an abstract are given. Also provided are author and subject indexes. (KW)

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GIFTED AND CREATIVITY RESEARCH

A Selective Bibliography

February 1971

CEC Information Center on Exceptional Children
The Council for Exceptional Children
Jefferson Plaza, Suite 900
1411 S. Jefferson Davis Highway
Arlington, Virginia 22202

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EC033023

ABSTRACTS

ABSTRACT 10039

EC 01 0039 ED 010 921
Publ. Date Aug 63 49p.
Karnes, Merle B. And Others
The Effects of Typing Instruction on Creativity and Achievement among the Gifted.
Champaign Community Unit School Dist., Ill.
EDRS mf,hc

Descriptors: exceptional child research; gifted; achievement tests; academic achievement; elementary school students; typewriting; creativity research; work study skills; creative writing; creative thinking; reading; spelling; intermediate grades; curriculum enrichment; Iowa Everypupil Tests; Guilford Unusual Uses and Consequences Tests; 1960 Stanford Binet Intelligence Scale; California Achievement Test; Champaign

Two groups of 31 or more fourth grade children, who tested at 115 or higher on the 1960 Stanford-Binet Intelligence Scale, received enrichment in creative thinking and writing. One group received typing instruction. Pretests administered in the fourth grade and again to the same students in the sixth grade included the California Achievement Tests (reading and spelling), work-study skills tests of the Iowa Everypupil Tests of Basic Skills, Guilford Unusual Uses and Consequences Tests, and a creative writing test. Results showed that the use of typing by academically talented intermediate grade children was not harmful to achievement in such areas as work-study skills, reading, and spelling. The experimental group using typewriters showed significantly greater gains in creative writing and creative thinking than did the control group. (JA)

ABSTRACT 10186

EC 01 0186 ED 018 031
Publ. Date Aug 65 121p.
Hennes, James D. And Others
The Illinois Television Project for the Gifted, a Combined Experimental and Demonstration Project to Test and Demonstrate Televised Enrichment Units for Students at Upper Elementary Levels. Final Report.
Illinois Univ., Urbana, Off. Instr. Resources
Central Illinois Instr. Television Assn., Urbana
EDRS mf,hc

Descriptors: exceptional child research; gifted; audiovisual instruction; enrichment; enrichment programs; academic enrichment; enrichment activities; astronomy; mathematics; geography; televised instruction; television; instructional television; video tape recordings; grade 5; grade 6; comparative testing; attitudes; changing attitudes; academic achievement; creativity; independent study; student reaction; demonstration projects

The results of an experimental project using three series of enrichment units are summarized in this report. Each project consisted of 12 half-hour videotape presentations in astronomy, mathematics, and geography. The lessons were presented to 570 gifted (average IQ of 124) fifth and sixth grade students who represented the upper 25 percent of the total fifth and sixth grade population. Control groups were established by having the children view two of the three series. Work in the project was voluntary, and no grades were given. The program operated completely apart from classroom context and did not involve teachers in any way. Viewers and nonviewers were compared in test performance reaction, attitude toward subject matter, and other factors. Results indicated that significant (.001 level of confidence) improvement in learned context occurred for all three courses. Pupils reported liking the lessons, but little or no difference in attitude or overt behavior was found between viewers and nonviewers. Few students reported any difficulty in keeping up with regular classroom work. The Creativity Aptitude of the student had little bearing on success in (achievement) or attitude toward the telecasts. Independent study ability was related to success in the course. Recommendations are made on selection of students who will view and methods of using the telecasts. Sample tests, questionnaires, and information on related studies are included. A bibliography lists 29 items. (RM)

ABSTRACT 10342

EC 01 0342 ED 013 518
Publ. Date 64 86p.
Barbe, Walter B.; Horn, R. A.
One in a Thousand: A Comparative Study of Moderately and Highly Gifted Elementary School Children.
Ohio State Dept. Educ., Columbus, Div. Spec. Educ.
Kent State Univ., Ohio, Dept. Spec. Educ.
EDRS mf,hc

Descriptors: exceptional child research; identification; gifted; student characteristics; children; elementary grades; family background; educational experience; physical development; adjustment (to environment); ability identification; talent identification; creativity; personality; socioeconomic background; Iowa Tests of Basic Skills; Stanford Binet Intelligence Scale; Childrens Personality Questionnaire; CPQ; IPAT; Columbus

Moderately gifted and highly gifted children were studied to determine differences in educational development, adjustment, physical development, and family background. School psychology interns nominated potentially capable pupils from grades 3 to 6. From these, 65 matched pairs of moderately gifted (IQ scores of 120 to 130) and highly gifted (IQ scores of 148 and above) were selected. Stanford-Binet Intelligence Test scores, Iowa Every Pupil Test of Basic Skills scores, Institute for Personality and Ability Testing Children's Personality Questionnaire scores, parent ratings of child, autobiographies, Who Is It scores, school records, socioeconomic levels, and home information were obtained. Structured interviews and instruments measuring creativity and self concept were used with 40 of the subjects. Findings indicated that the highly gifted group came from more affluent backgrounds, had more highly educated parents, and rated higher on creativity measures. Both groups were found to be well adjusted, and there were no outstanding differences of physical development. Teachers did not identify 25 percent of the highly gifted. Large numbers would have been missed through reliance on group tests. The study recommends a state registry of highly gifted children, summer workshops for teachers, and excess cost support. (RM)

ABSTRACT 10347

EC 01 0347 ED N.A.
Publ. Date Nov 67 16p.
Allen, Vernon L.; Levine, John M.
Creativity and Conformity.
Wisconsin Univ., Madison, Res. Dev. Ctr. Cognitive Learn.
OEC-5-10-154
EDRS mf,hc

Descriptors: exceptional child research; creativity; environmental influences; children; public schools; conformity; creativity research; visual perception; student attitudes; achievement; grade 5; matched groups; training; social factors; social influences

Conformity to group pressure was compared for 76 fifth grade public school subjects receiving a 4-week program of creativity training and for 88 controls matched on IQ scores, achievement scores, and socioeconomic status. Three weeks after the training period all subjects responded to a series of 24 slides consisting of visual, attitudinal, and achievement items. The children were retested an hour later with the same slides. In addition a fictitious class norm purporting to be the majority response was given orally after each slide on the second presentation. Effects of creativity training on conformity were quite specific since conformity was reduced on items having correct answers (achievement), but not on subjective items (visual, attitude). Results also showed that the subjects receiving creativity training responded significantly (p is less than .02) more selectively than controls to

items similar in content, agreeing with the group on some items but not on others. In addition, the creativity training reduced overall conformity for the low IQ subjects but not for the subjects of average and high IQ levels. It was concluded that there is a causal relation between creativity and conformity due to the transfer of common skills across the situations. Four tables and a 17-item reference list are included. (AA)

ABSTRACT 10378

EC 01 0378 ED 019 770
Publ. Date 67 72p.
Martinson, Ruth A.; Seagoe, May V.
The Abilities of Young Children. CEC Research Monograph Series.
Council For Exceptional Children, Washington, D. C.
EDRS mf

Descriptors: exceptional child research; gifted; cognitive processes; creativity; children; creativity research; sciences; social studies; intermediate grades; originality; creative writing; student ability; evaluation criteria; music; art; intelligence tests; Guilford Hoepfner Measures of Intellectual Ability

In order to assess the quality of creative products in art, music, writing, social studies, and science, children attending grades 3 to 6 of the University Elementary School of the Univeristy of California, Los Angeles, were divided into two groups on the basis of intelligence. The higher group (49 pupils, IQ of 130 or more) and the low group (57 pupils, IQ of 120 or less) were similar in educational backgrounds, external environment, parental valuing of education, parental level of education, and sex ratio. Three independent judgments of each child's product in each subject were made by experts in the particular field represented. Criteria for creativity included originality and effectiveness of expression. In five out of the eight products evaluated, a significant relationship (p equals .05) was found between high IQ and high quality of judged product. Findings thus supported the hypothesis that giftedness and creativity are not antithetical. Both groups were also given Guilford and Hoepfner's test for divergent thinking. The only test which significantly separated the high from the low groups was the Association Test (t test, p equals .05). Since no significant differences were found between high and low IQ groups on the four remaining tests, a negligible relationship between intelligence and divergent thinking was indicated. Examples of the children's products in all areas and an 18-item reference list are included. The appendix contains biographical sketches of the judges. This document is available from The Council for Exceptional Children, NEA, 1201 Sixteenth Street, N.W., Washington, D.C. 20036, for $2.00. (JP)

ABSTRACT 10551

EC 01 0551 ED 021 350
Publ. Date 62 71p.
Smith, Donald C.
Personal and Social Adjustment of Gifted Adolescents. CEC Research Monograph, Series A, Number 4.
Council For Exceptional Children, Washington, D. C.
EDRS mf
The Council For Exceptional Children, NEA, 1201 16th Street, N. W., Washington, D. C. 20036 ($2.00).

Descriptors: exceptional child research; gifted; adjustment (to environment); personality; behavior; adolescents; personal adjustment; social adjustment; self concept; self evaluation; interpersonal relationship; personality assessment; peer groups; intelligence factors; conformity; responsibility; Thematic Apperception Test; LaForce Suczek Interpersonal Check List

The study examined similarities and differences in the personal and social adjustment of intellectually gifted and average adolescents along six criteria: independent-dominant and responsible-cooperative interpersonal behavior, moderation of interpersonal behavior, unity or integration of personality, self acceptance, and accuracy of self perception. Two matched groups of 42 subjects each, one with IQ's from 130 to 150, the other with IQ's between 90 to 110, completed the Thematic Apperception Test (TAT) and the LaForge-Suczek Interpersonal Check List. Additional interpersonal ratings were secured from teachers and classmates. Results on interpersonal behavior indicated that the superior students were significantly higher in independent-dominant traits, aggressive-rebellious traits, and responsible-cooperative traits. On the TAT average students expressed a higher proportion of themes of masochism-weakness and conformity-trust. On concepts of ideal traits a significantly larger number of average subjects fell above the median on the responsible-cooperative cluster. On all other items, superior students failed to differ significantly. It was thus concluded that factors other than intellect influence personal and social adjustment. Earlier studies are reviewed, and 76 references are cited. Twenty-five tables and an appendix present data. (JD)

ABSTRACT 10577

EC 01 0577 ED 022 273
Publ. Date 65 28p.
Roberts, Roy J.
Prediction of College Performance of Superior Students.
National Merit Scholarship Corporation, Evanston, Illinois
EDRS mf,hc
National Merit Scholarship Corporation, 990 Grove Street, Evanston, Illinois 60201.
National Merit Scholarship Research Reports; V1 N5 1965

Descriptors: exceptional child research; gifted; achievement; academic achievement; grades (scholastic); high achievers; low achievers; sciences; art; music; speech; writing; leadership; college freshmen; predictive validity; grade point average; predictive measurement; questionnaires

Using 857 male National Merit Finalists and Commended Students, scales to predict 1st year college grades and science, writing, art, music, speech, and leadership achievement were developed by analysis of 906 pre-college questionnaire items. Two item analysis strategies were used: responses of achieving subjects (S's) and general samples of nonachieving S's were compared; responses of achieving and nonachieving S's who had previously indicated desire to achieve were compared. The two strategies did not yield essentially different scales. Validity coefficients ranged from .15 to .38 with 300 cross-validation S's; similar correlations resulted from applying the scales to 681 female S's. More items about past accomplishment, activities, and competence entered the scales than did other item types, relative to the size of the item pools. The content of the scales and the correlations among variables support some unfavorable interpretations of high grade achievement. Results suggest the hypothesis that the grade scales should be a negative predictor of nonacademic achievement, and the nonacademic scales should predict grades negatively. (Author/JD)

ABSTRACT 10626

EC 01 0626 ED 024 185
Publ. Date June 68 185p.
Martinson, Ruth A.; Wiener, Jean
The Improvement of Teaching Procedures with Gifted Elementary and Secondary School Students. Final Report.
California State College, Gardena
Office Of Education (DHEW), Washington, D. C., Bureau Of Research
EDRS mf,hc
OEC-4-6-061244-8948
BR-6-1244

Descriptors: exceptional child research; gifted; professional education; teaching methods; behavior; teaching models; teacher characteristics; inservice teacher education; teacher improvement; teacher rating; test reliability; behavior rating scales; test results; questioning techniques; teacher selection; teacher behavior

Inservice self-study was utilized to improve the qualitative level of classroom method among teachers of the gifted. Ten judges selected 45 to 75 elementary and secondary teachers by a rating scale of significant behaviors, classroom observation ratings, the Weiner Attitude Scale, and the Terman Concept Mastery Test. The 45 were considered flexible, intelligent, creative, and stimulating. Analysis of the teacher behavior scale indicated four main factors: individualized materials and instruction, art of questioning, encouragement of higher level learning, and communication-interaction. Inservice activities were pupil study (case studies) of gifted characteristics, study of classroom principles for higher level thinking, and discussion and evaluation of a teacher model; teacher-made videotapes of classroom activities, using the principles learned, were also shown and evaluated at the inservice

meetings. Interjudge reliabilities of .90 were obtained from audiotape analysis of the teachers' questions and answers at the beginning and end of the project. Significant improvement between the two tapes (p equals .01) occurred in the application, generalization, and synthesis questions by the teacher (indicating growth in higher cognitive level questions), and growth in open responses by students were noted. (Author/SN)

ABSTRACT 10633

EC 01 0633 ED 003 705
Publ. Date 65 63p.
Gold, Marvin J.
Effects of Self-Directed Learning on Gifted Elementary School Children.
Syracuse University, New York, Research Institute
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc
OEC-5-10-169 CRP-S-174

Descriptors: exceptional child research; achievement; teaching methods; gifted; adjustment (to environment); elementary school students; academic achievement; achievement gains; study skills; critical thinking; personal adjustment; social adjustment; student development; autoinstructional methods; reading; social studies; sciences; test results; self directed classrooms; resource materials; intermediate grades

Gifted school children worked for a period of several months in self directed learning situations in a resource room without teacher imposed direction. They had opportunities to explore areas of interest (during two class periods per day) in reading, social studies, and science in the manner and depth which they chose. Pretests and posttests were administered to measure student growth in academic achievement, study skills, divergent thinking, and personal and social adjustment. Test results were compared with those of a random control sample which had no contact with self directed learning. Other information was gathered through daily logs maintained by resource room personnel. Both the experimental group and the control group were chosen from fourth, fifth, and sixth grade classrooms and were considered to be moderately superior on various intellectual measures. Little difference was noted between the two groups on gains made in academic achievement, study skills, and divergent thinking ability. Personal and social adjustment appeared to be favorably affected when self direction was used. (JH)

ABSTRACT 10645

EC 01 0645 ED 024 208
Publ. Date Jul 68 66p.
Miles, David T.
Development of a Test for an Experimental Research Program in Creative Problem Solving. Final Report.
Southern Illinois University, Carbondale
Office Of Education (DHEW), Washington, D. C., Bureau Of Research
EDRS mf,hc
OEG-3-7-700037-2940
BR-7-E-037

Descriptors: exceptional child research; creativity; tests; cognitive processes; test reliability; test results; test interpretation; test construction; testing; evaluation; cognitive tests; item analysis; test validity; divergent thinking; problem solving; productive thinking; creative thinking; thought processes; Creative Design Test; CDT

The purpose of this first phase of a continuing research program was the development of a test of creative problem solving in general design. A design class of 186 members was divided into an experimental and control group; a non-design control group (an educational psychology class) of 45 was also tested. Multivariate interpretation of creative problem solving was developed; five test problems were selected to make up the Creative Design Test (CDT); and solutions were judged for fluency, flexibility, and originality. An acceptable scoring and interproblem reliability was achieved on the instruction, library materials, and school pride problems, but not on the laundromat and paper product problems. No construct validity was obtained from teacher ratings of creativity in class or from a comparison of design and non-design students. Predicted relationships were not supported between performance on the CDT and the amount of problem-related knowledge possessed or whether systematic or non-systematic problem solving procedures were employed. Variations in variety and originality of prior solutions examined before the test made little difference to test performance. (Author/SN)

ABSTRACT 10782

EC 01 0782 ED 025 062
Publ. Date 67 51p.
Helson, Ravenna
Effects of Sibling Characteristics and Parental Values on Creative Interest and Achievement.
California University, Berkeley, Institute Of Personality Assessment And Research
Office Of Education (DHEW), Washington, D. C., Cooperative Research Program
EDRS mf,hc
OEC-4-6-068012-0959 CRP-S-012-66
BR-6-8012

Descriptors: exceptional child research; gifted; creativity; family (sociological unit); personality; adjustment (to environment); siblings; academic achievement; creative development; family characteristics; family influence; family relationship; personality development; personal values; individual characteristics; rating scales; cognitive tests; interest scales; self concept

In investigating patterns of family relationships conducive to creativity, several inventory-type personality tests and a questionnaire about family relationships and childhood interests were sent to 99 Mills College alumnae 5 years after their graduation and to the siblings of 51 of them. All had been tested, while seniors, for personality and some had been selected as creative by the faculty. The 12 of the 51 who had been picked as creative had nine sisters and eight brothers participating while the comparison 39 had 31 sisters and 28 brothers participating. The creatives had higher verbal aptitude scores and made better grades than the other seniors (p less than .01) and since graduation had shown a higher level of creative activity (p less than .001). The brothers and sisters of the creatives consistently made higher scores than siblings of other Mills women on the indices of creative traits; they had a higher educational level (p less than .01); and the brothers received more honors for intellectual distinction (p less than .01). For the creative Mills sisters, support was found for the conceptualized pattern of having the following: dissatisfaction with their relationships in the family, symbolic facility and an approach to the world focused on the potential or intuitive rather than the practical, and confidence that they could intervene in symbolic affairs and could by their efforts and initiative gain a more satisfying set of relationships. (SN)

ABSTRACT 10841

EC 01 0841 ED 003 802
Publ. Date Jan 61 413p.
Getzels, Jacob W.; Jackson, Philip W.
Varieties of Giftedness in the Classroom: Studies of Cognitive and Psychosociological Functioning in Adolescents.
Chicago University, Illinois
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc
CRP-098

Descriptors: exceptional child research; cognitive processes; personality; gifted; creativity; adolescents; cognitive tests; concept formation; creativity research; psychological testing; intellectual development; moral values; testing; academic achievement; achievement; personal values; values; family environment; attitudes; student attitudes

The cognitive and psychosocial functioning of four categories of gifted children was studied. Two groups of adolescents showing different types of cognitive excellence (intelligence and creativity) and two groups exhibiting different types of psychosocial excellence (morality and psychological adjustment) were investigated using a wide variety of measures, some of them especially developed for this research. Traditional methods of evaluating giftedness have divided children into categories of high or low intelligence, but results of this study indicate there are two other useful categories of cognitive functioning: high IQ without concomitant high creativity and high creativity without concomitant high IQ. Those students representing those categories were found to be equally superior in scholastic achievement to the population from which they were drawn; but the two groups differed

sharply in value orientations, their effect upon teachers, their fantasy productions, their career aspirations, and in family environments. (AL)

ABSTRACT 10907

EC 01 0907 ED 026 750
Publ. Date 65 118p.
Gallagher, James J.
The Influence of a Special School on Cognitive Style and Attitudes of Gifted Students.
Illinois University, Urbana, Institute For Research On Exceptional Children
Illinois State Office Of The Superintendent Of Public Instruction, Springfield, Department Of Program Planning For The Gifted
EDRS mf,hc

Descriptors: exceptional child research; gifted; environmental influences; cognitive processes; adjustment (to environment); peer groups; student attitudes; laboratory schools; public schools; self concept; intellectual experience; divergent thinking; convergent thinking; secondary schools; social values; personal values

The study identified what influence university laboratory attendance had upon cognitive and attitudinal dimensions of gifted secondary school students (IQ's above 125). Tests from the Guilford battery, a self concept scale, and an adaptation of the Coleman Attitude Scale were administered to both the laboratory and the secondary school populations (249 students). Results indicated few consistent differences on measures of divergent and convergent thinking, and no significant differences on measures of self concept. The following attitudinal differences in lab school groups were observed: the concept of intellectual self was significantly higher at the senior than the junior high level for boys (p less than .01); a substantial reduction in the positive image of the family occured at the senior high level; and being active in school and popular with one's own sex was a better prestige symbol than athletics, heterosexual social activities, or material possessions. Further, in the lab school, a greater number of students expressed negative feelings about school or doubts about their own ability to do well. Sex and age differences are considered; specific results on attitudes and values are discussed. Disadvantages and advantages of both school settings are evaluated. Twenty-eight tables present data; a bibliography cites 23 items.

ABSTRACT 10910

EC 01 0910 ED 026 753
Publ. Date 66 169p.
Gallagher, James J.
Research Summary on Gifted Child Education.
Illinois State Office Of The Superintendent Of Public Instruction, Springfield, Department Of Program Development For Gifted Children
EDRS mf,hc

Descriptors: exceptional child research; gifted; administration; creativity; student characteristics; academic achievement; high achievers; state programs; underachievers; teacher qualifications; personnel needs; identification; teaching methods; administrative organization; research reviews (publications); ancillary services; curriculum development; program evaluation; Illinois

Research is summarized and analyzed in this revision of the author's 1960 Analysis of Research on the Education of Gifted Children, which was used as a guide in the construction and implementation ot the Illinois Plan for Program Development for Gifted Children. Information is provided on identification and definition and on characteristics of gifted children. Also discussed are the highly creative child and the underachieving gifted child (attention is given to talent from culturally different groups). Consideration of intervention includes research design and stresses three areas of intervention: the administrative, instructional, and adjunctive. Needed personnel and research development programs in Illinois are treated. Additional research is cited. The bibliography contains over 200 items, dated from approximately 1925 through 1966, and the reference list annotates 32 items. (JP)

ABSTRACT 10915

EC 01 0915 ED 026 758
Publ. Date 67 113p.
Gallagher, James J. And Others
Productive Thinking of Gifted Children in Classroom Interaction. CEC Research Monograph Series B, Number B-5.
Council For Exceptional Children, Washington, D. C.
Office Of Education (DHEW), Washington, D. C.;
Elizabeth McCormick Foundation, Chicago, Illinois
EDRS mf
The Council For Exceptional Children, NEA, 1201 16th Street, N. W., Washington, D. C. 20036 ($2.00).

Descriptors: exceptional child research; gifted; attitudes; cognitive processes; interaction; tests; academic achievement; high achievers; junior high school students; teacher attitudes; sex differences; student attitudes; family relationship; questionnaires; questioning techniques; cognitive measurement; convergent thinking; divergent thinking; evaluative thinking; participant characteristics; Guilford; Theoretical Model for the Complete Structure of Intellect

A research project attempted to identify and classify productive thought processes of gifted junior high school students and their teachers. Subjects were 176 gifted high achieving students of both sexes with a verbal IQ range of 127.21 to 136.35, a nonverbal IQ range of 122.88 to 134.59, and a chronological age range of 12.50 to 14.63 years. The students were given tests to determine attitudes and divergent thinking abilities and were evaluated for social qualities and class contributions by their teachers. Parents were asked to complete questionnaires independently to determine family relationships. Three judges, working as a team, tape recorded five consecutive sessions of classes in social studies, science, and English conducted by different teachers in the fall and again the following spring; all comments were classified according to levels of thinking defined in Guilford's structure of the intellect. The types of questions asked by teachers strongly influenced the quality of pupil response. More than 50% of questions asked in a class session were cognitive memory questions. The second most frequent category was convergent thinking, with a much smaller proportion of divergent and evaluative thinking questions. (BB)

ABSTRACT 11056

EC 01 1056 ED N.A.
Publ. Date Feb 66 19p.
Gallagher, James J.; Rogge, William
The Gifted. Chapter II, Education of Exceptional Children.
Illinois University, Urbana
EDRS not available
Review Of Educational Research; V36 N1 P37-55 Feb 1966

Descriptors: exceptional child research; gifted; identification; individual characteristics; learning; attitudes; sex differences; grouping (instructional purposes); acceleration; honors classes; independent study; counseling; grading; curriculum; underachievers; adjustment (to environment); disadvantaged youth; research reviews (publications); family environment

Research published between February 1963 and June 1965 on the gifted is summarized here. Studies reported are on identification and definition; characteristics, including learning, attitude and personality, and sex differences; and curriculum and program adjustments, including grouping, acceleration, independent study and honors, teacher training, grading and prediction, and counseling and careers. Also reviewed is the literature on perceptions of the gifted by others, underachievement (including family and intervention), and talent and the culturally disadvantaged (including intelligence and social environment). An assessment of the 3 years of research and a 75-item bibliography are provided. (JD)

ABSTRACT 11171

EC 01 1171 ED 003 828
Publ. Date 65 59p.
Rothney, John W. M.; Sanborn, Marshall P.
Verbal Skills of Superior Students.
Wisconsin University, Madison
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc
CRP-S-036

Descriptors: exceptional child research; gifted; tests; cognitive processes; cognitive tests; logical thinking; recognition; recall (psychological); thought processes; high school students; grade 10; grade 12; verbal ability; verbal tests; high achievers; learning processes; testing; student improvement

The value of a new procedure for assessing verbal performances of superior high school students was studied. The instrument consisted of two parts. In part A, the student was given an analogy and asked to identify the most logical relationship between the two elements in it. He was then asked to write a description of the relationship identified. Part B required the student to construct an analogy statement comparable to the one given. Part A was designed to study the student's reasoning behind the analogy he produced in part B. It was hypothesized that items of this nature might help differentiate students capable of original performance from those who become skilled in recognition and recall tasks. Experimental analogies items were administered to 143 10th grade and 130 12th grade students (males and females). Mean scores of both sophomores and seniors were almost twice as high on analogy recognition as on production. Mean scores for boys and girls at both grade levels showed negligible differences. It was concluded that scores on both parts of the test were associated with grade in school which in turn is associated with age and experience. However, results in production indicated little improvement from the 10th to the 12th grades. (AL)

ABSTRACT 11209

EC 01 1209 ED 002 823
Publ. Date 58 215p.
Young, Donald D.
Parental Influence Upon Decisions of Scholastically Talented Youth Concerning Higher Education.
Wisconsin University, Madison
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc
CRP-247

Descriptors: exceptional child research; gifted; family (sociological unit); parent attitudes; parental background; parent influence; higher education; high school graduates; college bound students; academic aspiration; motivation; family characteristics

The primary purpose of this investigation was to determine whether there are important differences in selected parental background factors between scholastically talented high school graduates who continue their education in degree-granting institutions and those who do not. There were two related problems: to determine the amount of stability of the post-high school plans of these scholastically talented youth, and to report on the specific activities in which they were engaged in the fall of 1957. Data used for the study were obtained by a statewide survey of 3,500 high school seniors concerning plans beyond high school and family background. A special analysis of 5,500 seniors was used as a later sampling. A survey of their parents determined what they were doing and furnished additional family background information. Analysis of data indicated that the education level attained by parents, occupation of father, economic status, financial help from parents, and parental encouragement were similar in both the students who went on to higher education and those who did not. In addition, a high degree of stability between the various plans of the group expressed in the spring and the realization of the plans was demonstrated. (GC)

ABSTRACT 11223

EC 01 1223 ED 002 864
Publ. Date 01 Sep 60 62p.
Lesser, Gerald S.; Davis, Frederick B.
Identification of Gifted Elementary School Children with Exceptional Scientific Talent.
City University Of New York, Hunter College
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc
CRP-392

Descriptors: exceptional child research; tests; identification; gifted; academic ability; academic aptitude; ability identification; elementary school students; talented students; sciences; test construction; predictive validity; grade 3; Hunter Science Aptitude Test

A test of science aptitude was constructed, and preliminary evidence of its validity obtained by individual administration to 58 gifted, 6- and 7-year-old children. Two forms of a 91-item Hunter Science Aptitude Test were constructed. Items included in these tests were designed to measure the ability to recall scientific information, to assign meanings to observations, to apply scientific principles in making predictions, and to use the scientific method. The tests were administered at the beginning of the school year and during the year at the completion of seven different science units. A single-weighted, composite science achievement score was thus obtained from each subject. The parallel forms reliability coefficient of the Hunter Science Aptitude Test and the reliability of the weighted composite science achievement score were found to be somewhat lower than expected. However, the predictive validity correlation coefficients were extremely high, because the aptitude tests and the science achievement criterion that were used overlapped the kinds of ability and content measured. Both were modeled upon the content of the third grade science curriculum. Research extensions were recommended in time and scope of the criteria, as well as in additional validation studies. (JH)

ABSTRACT 11282

EC 01 1282 ED 022 298
Publ. Date 59 187p.
Terman, Lewis M., Ed.
The Gifted Group at Mid-Life; Thirty-Five Years' Follow-Up of the Superior Child. Genetic of Genius, Volume V.
EDRS not available
Stanford University Press, Stanford, California 94305 ($5.50).

Descriptors: exceptional child research; gifted; family (sociological unit); behavior; health; personality; adjustment (to environment); intellectual development; occupations; educational background; recreation; social attitudes; political attitudes; demography; participant characteristics; personal interests; followup studies

The 35 years' followup of the Terman investigation on the gifted child is presented. In order to describe the gifted group at mid-life, a general information blank was mailed in 1950 (1,437 subjects) and in 1955 (1,424 subjects). The field study, completed in 1952, included personal interviews, the Concept Mastery Test, supplementary questionnaires of subject and spouse, and testing of offspring. Results for 97.5% of the subjects include the following: intelligence increased significantly from 1939 to 1952 (p less than .001); 85% of the group went to college and nearly 70% graduated; two-thirds of the men and three-fifths of the women did graduate work; on the Minnesota Occupational Scale, all subjects were in the first five of the seven groups and 86% were in the first two (professional and executive) and one-half of the women were housewives but many contributed to community and civic activities. The marriage rate and personal adjustment were average for the population. Other results are given for mortality, health, avocational interests, political and social attitudes, marriage, divorce, income, and offspring. Sixty-one tables are provided. The appendixes include the forms used and a 45-item bibliography. (SN)

ABSTRACT 11342

EC 01 1342 ED 003 343
Publ. Date Jul 65 139p.
Smith, Robert M.
The Relationship of Creativity to Social Class.
Pittsburgh University, Pennsylvania, School Of Education
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc
OEC-4-10-070 CRP-2250

Descriptors: exceptional child research; environmental influences; creativity; creative thinking; Caucasian students; creative activities; thought processes; socioeconomic influences; psychological evaluation; measurement instruments; Negro students; social class; grade 5; verbal ability

Environmental factors related to creative production were studied to obtain knowledge of the learning characteristics and educational performance of children from various socioeconomic levels. Children from the fifth grade were selected as subjects and included 395 Negro and 244 white children. Further division was based on four socioeconomic levels. A variety of measuring instruments was employed to gather the data and test the variables. Analyses were accomplished via covariance analysis (with correction for unequal, disproportionate means) and factor

analysis. The findings indicated significant differences in creative thought favoring the higher socioeconomic child in most verbal areas. The lower socioeconomic child, however, performed better in the nonverbal areas. Further research was suggested to determine the specific environmental factors which influence performance in creative thought. (RS)

ABSTRACT 11347

EC 01 1347 ED 002 815
Publ. Date 59 69p.
Pierce, James V.
The Educational Motivation Patterns of Superior Students Who Do and Do Not Achieve in High School.
Chicago University, Illinois
EDRS mf,hc
CRP-208

Descriptors: exceptional child research; gifted; achievement; motivation; academic achievement; talented students; self concept; social adjustment; peer relationship; grade point average; sex differences; grade 10; grade 12; low achievement factors; higher education; high achievers; low achievers; McClellands Thematic Apperception Test; TAT; Chicago Primary Mental Abilities; California Mental Maturity

The motivational patterns and the educational achievement of talented students were identified and analyzed. The objectives were to determine the differences between achievers and nonachievers in the following areas: motivation toward academic achievement; self concept, developmental history and home background, social adjustment, peer relationships, and parents' social status; and continuation of study beyond high school. Also, the patterns of educational motivation of boys and girls were studied for possible differences. It was found that high achieving students tend to be more highly motivated as measured by the interview Measure of Motivation and, in the case of boys, by McClelland's Test. Value achievement was higher as measured by the Semantic-Differential and, in the case of girls, by Strodtbeck's and Decharms' instruments, and more adjusted as measured by the California Psychological Inventory, Who Are They, and Behavior Description Chart instruments. The girls were more active in extracurricular activities, had more leadership, were more responsible and independent, had somewhat higher social status, came from small families where they were the first-born or only child, had parents who were better educated and held high aspirations for them, saw their fathers as important in their lives, and had mothers who placed a high value on imagination. (JL)

ABSTRACT 11552

EC 01 1552 ED N.A.
Publ. Date 65 32p.
Hyman, Ray
Creativity and the Prepared Mind. Research Monograph 1.
National Art Education Association, Washington, D. C.
Victor Lowenfeld Memorial Fund
EDRS not available
National Art Education Association, 1201 16th Street, N. W., Washington, D. C. 20036 ($0.60).
Paper Presented At The Symposium On Research And Art Education, National Art Education Conference, 1963.

Descriptors: exceptional child research; gifted; creativity; cognitive processes; evaluation techniques; measurement techniques; creative thinking; student evaluation; performance; task performance; problem solving; psychological testing; psychometrics

Cognitive maps or internal representations of a situation are discussed in terms of creative achievement and focus is placed on the influence of preconceptions on creativity. Research is cited in which 36 engineers who are divided into four groups to constructively or destructively criticize homogeneous or heterogeneous sorting methods and then attempt their own solutions and work on a transfer problem on Pyroelectric Effect. Both groups who constructively criticized the homogeneous and heterogeneous groups are rated as significantly more creative on both problems. The replication of this study (with alterations) and studies with a new focus (reformulations of initial solutions to problems) are described. Limitations of current creativity research are indicated with attention given to inadequacy of research tools, and the inability of current methods to deal with the interaction of variables in systems. Different ways of analysing data, research needs, and the gradual approach are discussed. (RJ)

ABSTRACT 11641

EC 01 1641 ED 003 440
Publ. Date 64 179p.
Walker, William J.
Creativity and High School Climate.
Syracuse University, New York
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc
OEC-4-10-079 CRP-S-004

Descriptors: exceptional child research; classroom environment; creativity; creative teaching; creativity research; environmental influences; high schools; high school students

The project studied the characteristics of a highly creative school as opposed to those of a traditional school. Four high schools of comparable socioeconomic and student ability level were involved, two of which were judged to be of the highly creative type. The students were given various tests, and classes were observed. The findings showed the following characteristics of creative schools: high aspiration level and intellectual climate; less authoritarian, but not less rational, teacher direction; and stimulating and original classroom behavior on the part of the teachers. Suggested aims for an extension of the present study include projects for comparison of creative student productivity as well as further investigation into the nature of creativity and of the relationship of the school environment to the development of creativity. (PM)

ABSTRACT 11765

EC 01 1765 ED N.A.
Publ. Date Feb 63 16p.
Birch, Jack W.; Reynolds, Maynard C.
The Gifted, Chapter 6.
EDRS not available
Review Of Educational Research; V33 N1 P83-98 Feb 1963

Descriptors: exceptional child research; gifted; research reviews (publications); identification; individual characteristics; achievement; curriculum development; social attitudes; acceleration; ability grouping; creativity; book reviews; research needs

Reviewed are studies on the gifted covering the 3-year period from December 1959 to 1962. Consideration is limited primarily to research and theory with selective emphasis on quantitative studies. Bibliographies are mentioned and research is covered for three major areas. Characteristics and identification of the gifted includes the topics of economics of talent, intellectual characteristics, personal and social characteristics, creativity and achievement, underachievement, and achievement motivation. Under curriculum development and adaptations, community and parental attitudes toward special education for the gifted, ability grouping, acceleration, and curriculum studies are discussed. In general developments, major books published since 1959 are listed and described and suggested. (JK)

ABSTRACT 11892

EC 01 1892 ED 028 558
Publ. Date Jul 64 46p.
Arends, Richard; Ford, Paul M.
Acceleration and Enrichment in the Junior High School; A Follow-up Study.
Washington State Office Of Public Instruction, Olympia
EDRS mf,hc
RR-03-05

Descriptors: exceptional child research; gifted; acceleration; enrichment; program evaluation; junior high school students; academic achievement; average students; student attitudes; teacher attitudes; sciences; mathematics; reading; student evaluation; testing

To test the effectiveness of a program of acceleration and enrichment, five ninth grade classes of students (25 in each class, IQ's 120 or above) who had been in this program for 2 years were compared to two control (C) classes of academically talented students who had not had the program. All students were given a series of standardized achievement tests and were asked to complete a school attitude questionnaire. Two experimental (E) classes were significantly superior in all comparisions in mathematics, in two of three comparisons in reading, and in one of three comparisons in science (p equals .05). In schools systems A and B the E-groups were

significantly superior in only two of six comparisons with C-groups. An analysis of the total performance of all the experimental classes revealed that they were significantly superior to the controls in only 10 of 21 cases (p equals .05). The performances of average E-groups from the same schools were significantly different from C's in only four of 30 comparisons. Responses from questionnaires did not indicate a significant difference in attitudes between the groups. Conclusions were that the acceleration and enrichment program did not hurt either academically talented or average students, that the special program could be improved, and that the program was more appealing to students and teachers than a more traditional approach. (RP)

ABSTRACT 11897

EC 01 1897 ED 028 577
Publ. Date Jul 67 62p.
Beaird, James H.
Dimensions of Creativity in Elementary School Children.
Oregon State System Of Higher Education, Monmouth, Teaching Research Division
Office Of Education (DHEW), Washington, D. C., Bureau Of Research
EDRS mf,hc
OEC-5-10-030
BR-5-8091

Descriptors: exceptional child research; creativity; individual characteristics; factor analysis; composition (literary); manipulative materials; student developed materials; art products; cognitive processes; comparative analysis; personality

To identify the parameters of creativity exhibited in products of sixth grade children, 25 subjects (12 girls and 13 boys) were asked to produce written, art, and mechanical objects and to write a description of the product indicating its use. Ten judges graded the relative creativity of the objects by comparing their similarity to an object considered to be standard. The resulting development of a judgmental space for each class was factor analyzed to determine factors of the creativity of the products. Students were administered a battery of personality tests and tests of cognitive characteristics. All of the creativity factors identified contained both personality and cognitive correlates. Factors identified for written products were novelty, flexibility, and openness to expression; factors for definition of the creativity of artistic objects were inventiveness and novelty; and the creativity of manipulative objects was characterized by the factor of novelty. Indications were that individuals who produced creative stories had a set of characteristics distinct from those of persons who produced the more creative art objects which also were distinct from those who produced the more creative manipulative objects. (RJ)

ABSTRACT 12003

EC 01 2003 ED 030 989
Publ. Date Jun 62 36p.
Early Identification of the Gifted Through Interage Grouping.
Plainedge Public Schools, New York
New York State Education Department, Albany
EDRS mf,hc

Descriptors: exceptional child research; gifted; grouping (instructional purposes); program evaluation; multigraded classes; elementary school students; age differences; adjustment (to environment); parent attitudes; student evaluation; experimental programs; grade 1; academic achievement; administration; identification; testing; social adjustment

To determine the advantages of interage grouping, 18 first graders (mean IQ 118.65) were assigned to two interage classes containing first, second, and third graders; 19 first graders (mean IQ 119.60) were assigned to two straight first grade classes. All children selected had been recommended by their kindergarten teachers as their brightest students. Both groups were given the Metropolitan Achievement Test, Primary I Battery in the fall and Primary II Battery in the spring. Students in the interage condition performed at a higher level on all achievement scales; group means were significant on word discrimination and arithmetic (p less than .01). Students selected as evidencing initial adjustment problems showed greater gains than their controls on all four scales. However, they achieved significantly lower scores on the California Test of Personality. The parents of children in both conditions responded favorably to questions concerning their children's reactions to school, their adjustment in and out of school, and their interest in reading. The parents of children in the interage program provided significantly higher ratings on the richness and variety of classroom experiences and the motivations provided to challenge the child to make use of his talents. The California Test of Personality revealed no significant differences in social adjustment of interage as opposed to straight grade classes. (Author/BB)

ABSTRACT 12075

EC 01 2075 ED 010 766
Publ. Date 65 69p.
Sands, Theodore; Hicklin, Charles R.
The Development and Testing of Instructional Materials for Gifted Primary Pupils. Final Report.
Illinois State University, Normal
Illinois Office Of Superintendent Of Public Instruction, Normal
EDRS mf,hc

Descriptors: exceptional child research; gifted; programed instruction; sciences; instructional materials; elementary school students; elementary school science; parent attitudes; audiovisual instruction; mathematics; education; physical sciences; student evaluation

Self-instructional science materials for gifted primary students were developed and used with first- and second-grade students. Units on atomic structure, the nature of molecules, measurement, and mathematics were developed, used, evaluated, and revised over a 2-year period. Lessons were presented through the use of tape players, illustrative materials, and workbooks. Students were selected on the basis of IQ scores and assigned to two groups. Each group used the materials for one-half of the experimental period. All students were pretested, tested at the end of the fourth week, and post-tested for achievement with instruments developed for the study. Other data were obtained from teacher evaluation forms and questionnaires completed by teachers and parents. Significant gains, at the .05 level, were obtained for the units concerned with mathematics, atoms, and measurement. A majority of the parents favored the use of the materials and indicated that the children developed interest through their studies. (AG)

ABSTRACT 20002

EC 02 0002 ED 020 590
Publ. Date 66 144p.
Gallagher, James J. And Others
Educational Problems and Planning for Gifted Students--Selected Papers from Graduate Leadership Training Program on the Gifted.
Illinois University, Urbana, Institute For Research On Exceptional Children; Illinois Department Of Program Planning For The Gifted, Urbana
EDRS mf,hc

Descriptors: exceptional child research; gifted; disadvantaged youth; leadership training; graduate study; sex differences; racial differences; intelligence differences; social mobility; social structure; honors curriculum; elementary school students; academic achievement; personality; self concept; language development; verbal ability; identification; summer workshops; social studies; curriculum development; values; sociometric techniques; research projects; logical thinking; Institute for Research on Exceptional Children

Seven articles from the Institute for Research on Exceptional Children consider the gifted child. The first article, Leadership Training for the Gifted--A Graduate Program, is by J.J. Gallagher, director of the program. Six research and development papers by graduate students follow: The Variables of Race, Sex and Intelligence Related to Social Choices of Disadvantaged, Gifted Children by V. Godman; Honors Program Students--Their Academic Attainments, Personality Traits and Self Concepts by W.D. Simmons; An Analysis of the Verbal Definitions of Elementary School Children--A Pilot Study by M. Weiser; Evaluation of a Summer Workshop on Gifted Children by F. Shaffer; Developing a Social Studies Curriculum for Teaching Values in the Elementary School by M. Schevers; and The Development of a Program of Sentential Logic for Gifted Students by K.A. Retzer. The student papers all provide figures, tables, and reference lists. (JD)

ABSTRACT 20022

EC 02 0022 ED 001 979
Publ. Date 64 183p.
Drews, Elizabeth H.
A Study of Non-Intellectual Factors in Superior (Average and Slow) High School Students. The Creative Intellectual Style in Gifted Adolescents. Motivation to Learning--Attitudes, Interests and Values.
Michigan State University, East Lansing
Office Of Education (DHEW), Washington, D. C., Bureau Of Research
EDRS mf,hc
OEC-SAE-9101
BR-5-0460

Descriptors: exceptional child research; personality; gifted; individual differences; student attitudes; student interests; personal values; high school students; environment; student characteristics; slow learners; East Lansing

A final report was given of a three-part study that was made to determine differences in the attitudes, interests, and values of gifted high school students in relation to their total environment. A research design was developed to delineate the characteristics of these gifted students, especially those characteristics which differentiate the three profile types of creative intellectual, studious, and social leaders. Superior students from the 10th, 11th, and 12th grades were assigned to one of the three profile groups on the basis of self-classification. Comparative analysis was performed throughout the study by drawing a contrast between two 11th grade groups, one average in ability and the other superior. Formal and informal measures were used to acquire the results. It was concluded that the creative intellectuals showed strong, self-directed interest in learning and a great willingness to deal with both the subjective data of the self and the objective data of the larger world. The studious, while also showing a concern for ideas and a desire to learn, mainly confined their efforts to completing teacher-directed assignments. The social leaders preferred to make their impact felt on people rather than in the realm of ideas. It was felt, that on the basis of these findings, new guidelines for educational strategies should be developed to take into account differences among the gifted. A related report is ED 003 182. (GD)

ABSTRACT 20028

EC 02 0028 ED 019 801
Publ. Date Feb 68 78p.
Burgart, Herbert J.
The Development of a Visual-Verbal Measure of General Creativity: The Symbol Test of Originality. Final Report.
Richmond Professional Institute, Virginia
EDRS mf,hc
OEG-2-7-07168-1534

Descriptors: exceptional child research; gifted; tests; creativity; verbal tests; originality; testing; factor analysis; pictorial stimuli; intelligence; cognitive processes; learning processes; maturation; self concept; test validity; test construction; visual perception; Symbol Test of Originality; STO

The Symbol Test of Originality (STO) was studied and modified to substantiate its usefulness and to meet several criteria for test construction: freedom from intellectual bias, simplicity, objectivity, and direct relationship to a general creativity factor. From an original group of 4,500 persons ranging in age from 10 to 25 years, from fifth grade through college, a random sampling of 600 was drawn, based on grade level percentages within the general population. The final population numbered 478 with 12 subgroups. Three modified versions of the STO and the original version were selected along with items from Kiselbach's Test of Aesthetic Discrimination, Thurston's Hidden Figures and Mutilated Words Test, Guilford's Brick Uses Test, and modified forms of Taylor's Relationship Test and of a Self Concept Rating Scale. Biographical data were also gathered. The battery was given to the 4,500 sample, and its analysis yielded variables of general creativity, visual perception, maturation, process strategy, self concept, and biographical information. Four significant factors were observed: general creativity, intelligence, process strategy, and maturation. Conclusions were that general creativity could be isolated, although it is a composite of varying proportions of several primary creativity abilities, and that the criteria set for the measure were appropriately met. An appendix contains the STO, Variable Description, Variable Analysis 15-41, Symmetric Correlation Matrix, Rotated Matrix of Factor Loadings, and Project Test Battery. (AA/JP)

ABSTRACT 20031

EC 02 0031 ED 027 652
Publ. Date 65 353p.
Torrance, E. Paul
Rewarding Creative Behavior; Experiments in Classroom Creativity.
Minnesota University, Minneapolis, College Of Education
Office Of Education (DHEW), Washington, D. C., Cooperative Research Branch
EDRS not available
CRP-725
Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07632 ($7.95).

Descriptors: exceptional child research; creativity; teaching methods; evaluation; reinforcement; tests; teacher attitudes; research reviews (publications); thought processes; sex differences; rewards; peer relationship; self concept; cultural differences; case studies (education); measurement techniques; effective teaching; originality; educational methods; experimental programs

The need for rewarding creative thinking is asserted; a plan is proposed for studying evaluation and creative behavior; and measurement of creative behavior is discussed. Three groups of studies are presented. The first set considers the ways the intermediate environment rewards creative behavior; aspects treated include applying principles for rewarding creative thinking, creative and critical evaluative attitudes of teachers, creative activities as rewards for creative thinking, and differential rewards for boys and girls. The second set investigates the following issues about the evaluative behavior of the classroom teacher: competition as external evaluation; unevaluated practice and creative behavior; critical and creative peer-evaluated practice; evaluative discussions about creative productions; peer pressures in homogeneous and heterogeneous groups; positive, negative, and trouble-shooting evaluation; and cultural differences in evaluating creative characteristics. The final study concerns helping children value their ideas. Practical applications of the studies are presented; appendixes are provided on the instruments used in the described studies and on developing creative thinking through language arts. (JD)

ABSTRACT 20040

EC 02 0040 ED 003 579
Publ. Date 62 85p.
Smith, Wendell I.; Moore, J. William
Programed Materials in Mathematics for Superior Students in Rural Schools.
Bucknell University, Lewisburg, Pennsylvania
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc
OEG-736101 NDEA-VIIA-489

Descriptors: exceptional child research; gifted; mathematics; teaching methods; programed instruction; mathematics instruction; teaching machines; rural schools; programed texts; autoinstructional programs; modern mathematics; student seminars; instructional technology; programed materials; high school students; rural education

A study was conducted on the achievements of superior students who used programed instruction and seminars in modern mathematics. Two experiments were conducted to test the hypotheses that superior students using programed instruction will achieve higher scores than those using conventional materials, students using programed instruction by machine will not differ from those using a programed textbook, and students will not show a preference between the two modes of programed instruction. Four groups were established for the basic experiment. The sample consisted of 100 high school students who were randomly assigned to the machine, programed textbook, conventional textbook, or control groups. The results indicated that self-instructional materials in mathematics can be used profitably by superior students with or without a teacher. (RS)

ABSTRACT 20164

EC 02 0164 ED 031 832
Publ. Date 69 142p.
Wallach, Michael A.; Wing, Cliff W., Jr.
The Talented Student; A Validation of the Creativity-Intelligence Distinction.

EDRS not available
Holt, Rinehart And Winston, Inc., 383 Madison Avenue, New York, New York 10017 ($3.95).

Descriptors: exceptional child research; gifted; creativity; intelligence; identification; cocurricular activities; academic achievement; college students; originality; talent identification; productive thinking; individual characteristics; cognitive processes; prediction; college admission

To investigate intelligence level, academic achievement, nonacademic achievement, ideational productivity, and the uniqueness of the ideas produced, a sample of 503 incoming freshman university students was recruited. Intelligence was measured by using students' Scholastic Aptitude Test scores; verbal and visual stimuli were used to elicit ideas. Correlations between intelligence and the number and uniqueness of ideas were low while high productivity and high uniqueness scores tended to go together. Students were divided into groups of high and low intelligence, high and low ideational productivity, and high and low ideational uniqueness. Intelligence was found to exert no effect on the generality of nonacademic accomplishments; however, the number of ideas typically produced by the student and the uniqueness of the ideas had a significant impact on nonacademic accomplishments (p less than .001 for the total group). Implications were that students who will succeed at creative writing, science, painting, or some other endeavor cannot be predicted by grades or test scores alone. Nonacademic accomplishments should be examined and credited when searching for talented students. (RJ)

ABSTRACT 20167

EC 02 0167 ED 031 835
Publ. Date Mar 68 22p.
McFee, June King
Creative Problem Solving Abilities in Art of Academically Superior Adolescents.
National Art Education Association, (NEA), Washington, D. C.;
Stanford University, California, School Of Education;
Palo Alto Public Schools, California
Ford Foundation, New York, New York
EDRS mf
National Art Education Association, 1201 16th Street, N. W., Washington, D. C. 20036 (HC $0.60).

Descriptors: exceptional child research; art; gifted; creativity; curriculum; art education; problem solving; design; student evaluation; creative art; testing; student attitudes; thought processes; self concept

To investigate the relationship of a creativity-oriented design curriculum to the creative development of gifted adolescents, an activities guide was developed and used with 27 pupils placed in a special art class which met for one period daily. Creativity tests were given and evaluations of art products were made before and after six months of the program for the experimental group and the 32 controls; although these frequently called for subjective judgements, criteria for rating were established. Students in the experimental group generally performed significantly better in tests of fluency, adaptive flexibility, and originality requiring divergent production, but not in convergent production or in rate of emission of familiar congitive responses. Attitudes toward creativity changed in a positive direction, and experimental students indicated less fear of failure and more self confidence. Conclusions were that designing may be a more complex process than had been assumed and that an art program focusing on problem solving and creative behavior has important functions in the education of the gifted. (RJ)

ABSTRACT 20187

EC 02 0187 ED 031 855
Publ. Date Apr 68 35p.
The Gifted.
Council For Exceptional Children, Washington, D. C.
EDRS mf
From CEC Selected Convention Papers From The Annual International Convention (46th, New York City, April 14-20, 1968).

Descriptors: exceptional child research; gifted; conference reports; educational theories; disadvantaged youth; learning disabilities; educational programs; televised instruction; teaching methods; curriculum development; abstracts

Presentations on the gifted include the following: theoretical principles in differential education by Virgil S. Ward; the relationship of educational theories and program evaluation by Joseph S. Renzulli; applications of theory in curricular development by Louise Ann Schifferli; teacher-pupil interaction patterns in classes for the gifted by Fred K. Honigman; developing the potential of culturally disadvantaged infants by Genevieve Painter. Abstracts of articles treat these topics: gifted children with specific learning disabilities by Edward C. Frierson; the disadvantaged gifted by william J. tisdall; patterns of research on the gifted by Marvin J. Gold; special education through television by Mary M. Pilch; and a report on a study of educational programs for the gifted in selected elementary schools by William G. Melville. This unit of reports is available in microfiche. (RJ)

ABSTRACT 20230

EC 02 0230 ED N.A.
Publ. Date Apr 57 126p.
They Went to College Early. Evaluation Report Number 2.
Ford Foundation, New York, New York, The Fund For The Advancement Of Education
EDRS not available
The Fund For The Advancement Of Education, 655 Madison Avenue, New York, New York 10011.

Descriptors: exceptional child research; early admission; gifted; college admission; program evaluation; high school students; admission criteria; academic achievement; social adjustment; parent attitudes; student attitudes; testing; academic failure; transfer students; withdrawal; administrator attitudes; individual characteristics; emotional adjustment

Twelve colleges and universities participated in a program of early admission for promising high school students. Colleges selected students according to their own criteria of high academic promise and maturity; scholarship aid was provided. Most of the students received the same academic treatment as other freshmen; 70% were male; 80% came from urban areas; 73% attended public schools; and most were from the middle class, were 16 or younger, and had not completed high school. Academically, the students as a group outperformed their classes as a whole, and a higher proportion ranked in the top of their classes than a comparison group with similar abilities. Of 860 scholars who entered the 12 colleges in 1951 and 1952, about 6% failed academically and 6% failed because of adjustment difficulties. The greatest loss of scholars was through transfer to other institutions. Forty-two percent of the 1957 group felt that early admission was profitable while 75% of the 1952 group felt this way. Parents whose children did well tended to express approval while parents of unsuccessful children tended to show reservations. All participating colleges considered the program a success. Conclusions were that high academic achievement and the ability to handle the responsibilities of college life are requirements for early admission. (RJ)

ABSTRACT 20651

EC 02 0651 ED N.A.
Publ. Date Jan 64 189p.
Bixler, Harold H.; Cowan, Anne
The Superior and Gifted Student Project at Cullowhee. A Follow-Up Study.
Western Carolina College, Cullowhee, North Carolina
EDRS not available
Superior And Gifted Student Project, Western Carolina College, Cullowhee, North Carolina 28723.

Descriptors: exceptional child education; gifted; superior students; summer programs; academic achievement; followup studies; teacher role; parent role; program evaluation; accelerated programs; teacher education; elementary school students; high school students; student attitudes; teacher attitudes; parent attitudes; participant characteristics; student evaluation; Western Carolina College

Follow-up studies were conducted to determine the influences of four summer projects (1958-1961) upon gifted students and their teachers. Elementary groups had an IQ range from 146-210 and the high school students' range was 98-147. Questionnaires were sent each year to students, parents, and teachers, and school and home visits were made.

The findings of the three programs, elementary, high school, and teacher training, are presented mainly by direct quotes from questionnaires and interviews. The student areas covered are acceleration, motivation, financial aid, guidance, home problems, social and emotional adjustments, study habits, and underachievement. Statistical information on each group is included along with a summary of the findings for each program. The teacher-training program has two aspects: a two-week workshop for teachers and a leadership conference for school leaders. Their comments in the areas of initiating a program, grouping, nongraded primary, enrichment, curriculum and methods are given. The findings include the following needs: special methods for gifted students, guidance and counseling services, school and home working together, enrichment, care taken with problems of emotional and social adjustments, early identification of underachievers, and new procedures for school reports and grading systems. (DS)

ABSTRACT 20835

EC 02 0835 ED 032 702
Publ. Date Jun 69 21p.
Youngs, Richard C.; Jones, William W.
The Appropriateness of Inquiry Development Materials for Gifted Seventh Grade Children. Final Report.
Illinois State University, Normal, Metcalf Laboratory School
Illinois State University, Normal, University Research Committee;
Illinois Office Of The Superintendent Of Public Instruction, Columbus, Department Of Program Development
EDRS mf,hc

Descriptors: exceptional child research; gifted; teaching methods; inquiry training; instructional materials; sciences; academic achievement; critical thinking; questioning techniques; teacher behavior

To test the efficacy of inquiry development materials with the gifted, six 7th-graders with IQ's in the top 3% participated in an inquiry science class with specially selected materials twice a week for 40 minutes over 6 months; six children with like IQ's worked on science activities in another room. Pre- and posttests in critical thinking and science achievement were administered; in addition, measures of inquiry and analyses of student questions and teacher interaction were made. Results indicated that the students in the inquiry class asked significantly more questions relating to experimentation and that the teacher, while in the inquiry class, was significantly more likely to clarify pupil questions and to respond to pupils seeking data than he was with the conventional class, to whom he provided data. Other results were nonsignificant, thus failing to provide evidence for noticeable improvement in the area of inquiry. (JD)

ABSTRACT 21026

EC 02 1026 ED N.A.
Publ. Date 64 160p.
Drews, Elizabeth Monroe
The Creative Intellectual Style in Gifted Adolescents; Motivation to Learn: Attitudes, Interests and Values.
Michigan State University, East Lansing, Cooperative Research Program
Office Of Education (DHEW), Washington, D. C.
EDRS not available
OEC-SAE-9101-5-0460-2-1
2-1
Michigan State University Press, Box 550, East Lansing, Michigan 48824.

Descriptors: exceptional child research; gifted; student attitudes; student interests; individual differences; personal values; creative ability; social values; student leadership; ability identification; academic achievement; creativity; individual characteristics

To determine differences in the attitudes, interests, and values of gifted high school students in relation to their total environment and to delineate the characteristics of these gifted students, especially those characteristics which differentiate the three profile types of creative intellectual, studious, and social leaders, superior students from the tenth, eleventh, and twelfth grades were assigned to one of the three profile groups on the basis of self-classification. Comparative analysis was performed throughout the study by drawing a contrast between two eleventh grade groups, one average in ability and the other superior. It was concluded that the creative intellectuals showed strong, self-directed interest in learning and a great willingness to deal with both the subjective data of the self and the objective data of the larger world. The studious, while also showing a concern for ideas and a desire to learn, mainly confined their efforts to completing teacher-directed assignments. The social leaders preferred to make their impact felt on people rather than in the realm of ideas. It was felt, that on the basis of these findings, new guidelines for educational strategies should be developed to take into account differences among the gifted. Extensive tables present results. (Author/GD)

ABSTRACT 21096

EC 02 1096 ED 029 090
Publ. Date Sep 68 29p.
Hahn, Marshall
Review of Research on Creativity.
Minnesota Research Coordinating Unit In Occupational Education, Minneapolis
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc

Descriptors: bibliographies; creative ability; creative development; creativity; creativity research; imagination; individual characteristics; inhibition; literature reviews; originality; research reviews (publications)

This literature review on creativity covers 92 references dating from 1906 to 1966. It is one of a series on topics pertinent to vocational, technical, and practical arts education. Major units of the review are Defining Creativity, Measuring Creativity, Creativity and Intelligence, Characteristics of the Creative Individual, Teaching and Creativity, and Inhibitors of Creativity. (EM)

ABSTRACT 21121

EC 02 1121 ED N.A.
Publ. Date Feb 70 11p.
Schaefer, Charles E.
A Psychological Study of 10 Exceptionally Creative Adolescent Girls.
EDRS not available
Exceptional Children; V36 N6 P431-41 Feb 1970

Descriptors: exceptional child research; gifted; creativity; adolescents; family background; educational background; self concept; personality assessment; leisure time; student interests

Ten high school girls were identified as exceptionally creative on the basis of teacher nominations and test scores. Historical, personality, and projective data were collected by means of tests and interviews. Particular emphasis was placed on life history antecedents of creative achievement. The highly creative girls were found to possess a number of common characteristics, particularly in the areas of familial and educational history, leisure time activity, fantasy experience, and self concept. (Author)

ABSTRACT 21285

EC 02 1285 ED N.A.
Publ. Date Dec 65 214p.
Birch, Jack W. And Others
A Field Demonstration of the Effectiveness and Feasibility of Early Admission to School for the Mentally Advanced Children.
Pittsburgh University, Pennsylvania, School Of Education
Office Of Education, Washington, D. C.
EDRS mf,hc
OEC-2-10-074 CRP-D-010

Descriptors: exceptional child research; gifted; demonstration programs; early admission; early childhood education; kindergarten; academic achievement; social adjustment; personal adjustment

A 4-year study demonstrated the feasibility and effectiveness of early admission to school for mentally advanced children. Approximately 800 children were screened to locate the 36 children who entered kindergarten before the usual time. Criteria for early admission included an IQ of 130 or higher, social maturity at least 1 year advanced, absence of health problems, satisfactory emotional development, approval by kindergarten teachers after observation of a kindergarten visit, and parental approval. Data were collected on the attitudes, costs, and modifications required in activities of professional staff, and on the achievement of pupils. Children admitted early to school on the bases of mental, physical, social, and emotional readiness did as well in academic work as their older classmates of like ability in kindergarten and first and

second grades. On sociometric measures there was no evident difference between early admitted children and others. The process of demonstration was analyzed in terms of innovation and change. Information about the demonstration was disseminated widely through public information media. (JM)

ABSTRACT 21289

EC 02 1289 ED 028 027
Publ. Date Apr 68 16p.
Stemmler, Anne O.
Reading of Highly Creative Versus Highly Intelligent Secondary Students.
EDRS mf,hc
Paper Presented At International Reading Association Conference (Boston, Massachusetts, April 24-27, 1968).

Descriptors: exceptional child research; creative reading; creativity; functional reading; gifted; imagination; intelligence; interpretive reading; reading proc esses; reading skills; secondary school students; cognitive processes

The purpose of this study was to explore the similarities and differences in the reading behaviors of highly creative (HC) and highly intelligent (HI) secondary students. An intensive analysis of the oral introspective and retrospective responses of 36 subjects to two written passages was made. An experimental classification framework was developed to analyze the data. Results include the following: the HC group exceeded the HI group in responses for selected content elements and cognitive patterns in both free and controlled reading situations; there was no difference between groups in the recall of directly stated information; the HC group exceeded the HI group in reading for nonliteral meanings; and the HC group exceeded the HI group in variation of thinking methods. It was concluded that these two groups had different reading styles. The HC group possessed imaginative characteristics and read from within. The HI group possessed intellective characteristics and read from without. The implications of this study for the areas of understanding giftedness, understanding the reading process, and curriculum planning are discussed. Sample interviews are included. (BS)

ABSTRACT 21305

EC 02 1305 ED 031 757
Publ. Date Jun 69 28p.
Check, John F.
An Analysis of Differences in Creative Ability Between White and Negro Students, Public and Parochial, Three Different Grade Levels, and Males and Females. Final Report.
Wisconsin State University, Oshkosh
Office Of Education (DHEW), Washington, D. C., Bureau Of Research
EDRS mf,hc
OEG-0-8-080117-3725-010
BR-8-E-117

Descriptors: exceptional child research; Caucasian students; creative ability; creative development; creativity; creativity research; grade 4; grade 7; grade 12; Negro students; parochial schools; student characteristics; student evaluation; teacher attitudes; public schools; sex differences; age differences

The purposes of this investigation were to determine whether differences in creative ability exist between white and Negro students, between public and parochial school students, between students of different grade levels, and between sexes. A corollary purpose of this study was to determine how well teachers can identify the creative students in their classes by personal contact and by observation. A total of 600 students in grades four, seven and twelve were given the California Test of Mental Maturity and the Torrance Tests of Creative Thinking. The teachers involved with these students were asked to select the five most and the five least creative students in their classes. Significant differences were shown between grades four and twelve, favoring the higher grades. Public school students were more creative than parochial students. No significant differences were found between Negro and white students, between grades seven and twelve, or between the sexes. Results indicate teachers are not able to identify creative students. (Author/KJ)

ABSTRACT 21340

EC 02 1340 ED N.A.
Publ. Date 66 23p.
Godman, Verna
The Variables of Race, Sex and Intelligence Related to Social Choices of Disadvantaged, Gifted Children.
Champaign Public Schools, Illinois
Illinois State Office Of The Superintendent Of Public Instruction, Springfield
EDRS not available
Office Of The Superintendent Of Public Instruction, State Office Building, Springfield, Illinois 61106.

Descriptors: exceptional child research; gifted; disadvantaged youth; social attitudes; sociometric techniques; racial attitudes; social integration; sex differences; racial differences; social relations; parent school relationship; intelligence factors; racial integration; integration effects; racial discrimination; Negroes; Caucasians

To explore the relationship of sex, race, and intelligence factors to social choice, a sociometric questionnaire was administered to 100 culturally disadvantaged, gifted children composed of both Negro and Causasian boys and girls. Results showed that sex was the most important single factor in choosing companions, race the next most important factor, and intelligence the least significant. The isolates tended to be from the more deprived homes and were usually quiet and withdrawn with a few being the aggressive type. Diagrams are provided indicating sex and race characteristics of choices. (RD)

ABSTRACT 21341

EC 02 1341 ED N.A.
Publ. Date 66 22p.
Simmons, Wilber D.
Honors Program Students: Their Academic Attainments, Personality Traits and Self Concepts.
Illinois University, Urbana, Institute For Research On Exceptional Children
Illinois State Office Of The Superintendent Of Public Instruction, Springfield
EDRS not available
Office Of The Superintendent Of Public Instruction, State Office Building, Springfield, Illinois 61106.

Descriptors: exceptional child research; gifted; honors curriculum; self concept; college students; questionnaires; intelligence tests; personality tests; creative ability; program effectiveness; motivation; academic achievement; student characteristics; student attitudes

Self concept questionnaires were administered to 196 participants of the James Scholars honor program at the University of Illinois. Data from these and from previously administered intellectual, creativity, and personality tests were analyzed in order to determine student characteristics among those who had become inactive in the program with those who remained active. Results showed little in the way of a significant and consistent pattern of differences between Inactive and Active scholars of either sex. Conclusions included a need for program improvement and further studies in motivation and attitudes of students. (RD)

ABSTRACT 21514

EC 02 1514 ED 027 562
Publ. Date Nov 68 120p.
Freeman, James And Others
Creativity-A Selective Review of Research. Research into Higher Education Monographs.
Society For Research Into Higher Education, Ltd., London, England
EDRS mf,hc
Society For Research Into Higher Education, Ltd., 2 Woburn Square, London Wc1 (21 Shillings).

Descriptors: creative development; creativity; creativity research; environmental influences; environmental research; intellectual development; originality; self expression; thought processes

Largely as a result of the extensive work carried out during the past decade, the concept of creativity has become increasingly important in educational and psychological thinking. This monograph attempts to impose a framework within which to describe the main varieties of research on creativity. The monograph includes the following areas as chapters: creativity as related to intelligence and personality; special abilities in creativity, the structure of intellect; special abilities in creativity, some research into convergent and divergent thinking; educational factors in creativity in terms of observed psychological differences between individuals. A selected bibliography intended to facilitate further inquiry is grouped into the following sections: general and theoretical analyses of creativity, studies of creativity in the arts and sciences, personality and intellectual

characteristics in creativity, the development of creativity, environmental studies, studies of problem-solving in creativity, group processes and group effectiveness in creativity, tests and measurements, and research reports prepared by the Aptitudes Research Project, University of Southern California. (IM)

ABSTRACT 21674

EC 02 1674 ED 021 257
Publ. Date Dec 67 56p.
Welsh, George S.
Relationships of Intelligence Test Scores to Measures of Anxiety, Impulsiveness, and Verbal Interests in Gifted Adolescents. Final Report.
North Carolina University, Chapel Hill
Office Of Education (DHEW), Washington, D. C., Bureau Of Research
EDRS mf,hc
OEG-1-7-0009-3471
BR-7-C-009

Descriptors: exceptional child research; anxiety; correlation; gifted; group intelligence testing; individual characteristics; intelligence tests; personality; self concept; self control; verbal ability; vocabulary

The degree to which potentially useful group intelligence tests were affected by personality characteristics such as anxiety, impulsiveness or caution, and verbal interests was investigated by a battery of intelligence, interest, and personality tests administered to 1,163 gifted adolescents in special summer programs. Intelligence was measured by the D-48 (nonverbal) and the Terman Concept Mastery Test (CMT-Verbal), anxiety by the Minnesota Multiphasic Personality Inventory (MMPI) A-scale, impulsivity by the MMPI Pd- and Ma-scales, verbal interest by the Strong Vocational Interest Blank (SVIB) Lawyer and Author-Journalist (men's) scales, self-concept by Gough's Adjective Check List, and carelessness by errors on easy intelligence items. Significant negative correlations were found between anxiety and intelligence, impulsivity and intelligence, and carelessness and intelligence. Positive correlations were found between verbal interest and verbal intelligence, non-verbal and verbal intelligence, and counseling readiness and intelligence. Wider use and revision of the D-48, restricted use of the CMT, part and total score-reporting of the CMT, and additional correlational analyses between the MMPI scales and Adjective Check List, and between the SVIB scales and the two intelligence tests are recommended. (WR)

ABSTRACT 21688

EC 02 1688 ED N.A.
Publ. Date Feb 68 91p.
Oden, Melita H.
The Fulfillment of Promise: 40-Year Follow-Up of the Terman Gifted Group.
Stanford University, California, Department Of Psychology
EDRS not available
Genetic Psychology Monographs; V77 First Half P3-93 Feb 1968

Descriptors: exceptional child research; gifted; achievement; personal adjustment; individual characteristics; follow-up studies; success factors; adult characteristics; psychological characteristics; political attitudes; social values; social characteristics; personality; professional recognition; educational background; family background

As followup, a seventh survey was done in 1960-61 of the 1538 subjects studied by Terman in 1921-22 (857 boys and 671 girls, aged 3 to 19, all scoring in top 1% on intelligence tests). Data were obtained by mail questionnaire for 87% of the 1398 subjects still living (median age 49). Conclusions were as follow: the subjects had become gifted adults, maintained intellectual ability, had lower mortality rates, and good physical and mental health, manifested minimal crime, ranked high in educational and vocational achievements, were active in community affairs, and held moderate political and social views. Two-thirds felt they had lived up to their intellectual ability. To assess correlates of vocational achievement, the 100 most and 100 least successful men were compared. Results indicated that the most successful men came from families having higher socioeconomic status and giving more encouragement to succeed; ranked higher as adolescents in volitional, intellectual, moral, and social traits; and had more self confidence, perserverance, and integration toward goals. In addition, although scholastic achievement had been similar in grade school, half as many of the least successful men had graduated from college; they were also more prone to emotional and social difficulties. (DS

ABSTRACT 21938

EC 02 1938 ED 036 917
Publ. Date Jul 68 314p.
McGuire, Carson And Others
Dimensions and Criteria of Talented Behavior. Final Report.
Texas University, Austin, Research And Development Center For Teacher Education
Office Of Education (DHEW), Washington, D. C., Bureau Of Research
EDRS mf,hc
OEC-5-0743-2-12-1
BR-1138

Descriptors: exceptional child research; gifted; talent; individual characteristics; prediction; academic achievement; behavior patterns; talent development; intellectual development; cognitive ability; personality; behavior theories; peer relationship; self concept; student evaluation; social values

With a dyadic interaction theory of human development and behavior as the framework, factor and multiple regression analyses were used to determine predictors and criteria of talent (socially or culturally valued behavior). Analyses covered grade point average and scores on standard academic achievement and scholastic aptitude tests; also covered were teacher, peer, and self ratings. Of the resulting 15 underlying criteria of talented behavior in 961 twelfth graders and nine predictors in 1,464 ninth graders, intercorrelations were found between the following (criterion appears first): academic performance and convergent thinking; reputed brain and peer evaluated brain; social poise and peer evaluated brain, also self rated conformist; and (negative) potential delinquent and social isolation. Findings supported the dyadic theory. Discussions are provided on the theory and on teacher evaluation of academic achievement; data, methodology, and dissertation abstracts by staff are appended. (JD)

ABSTRACT 21979

EC 02 1979 ED 036 957
Publ. Date 24 Sep 69 29p.
Davis, Gary A. And Others
Laboratory Studies of Creative Thinking Techniques: The Checklist and Morphological Synthesis Methods.
Wisconsin University, Madison, Research And Development Center For Cognitive Learning
Office Of Education (DHEW), Washington, D. C.
OEC-5-10-154 TR-94

Descriptors: creativity research; creative thinking; problem solving; inquiry training; questioning techniques; productive thinking; cognitive processes; check lists; thought processes; performance factors; teaching methods; productivity

Six experiments were conducted to determine whether idea checklists increased idea quantity and quality. College students were allowed 10 or 20 minutes or unlimited time to find ideas for product improvement problems. Results indicated that the only checklist which significantly stimulated productivity was composed of just seven general categories of solutions (e.g., change shape, change material). Another creative thinking technique, the morphological synthesis procedure (Allen, 1962), also significantly stimulated idea production, but a direct comparison with the brief checklist condition was not meaningful. Subjects provided with longer checklists, including Osborn's (1963) 73 idea spurring questions, performed no better than controls. With additional problem solving time, rate of idea generation decreased but idea quality increased. Object complexity, manipulated in two timed studies, was not systematically related to product improvement scores, and instructional constraints to be original and be practical decreased idea frequency. It was thus concluded that creative output can be increased by teaching deliberate techniques for generating new combinations of ideas. (Author/JD)

ABSTRACT 22030

EC 02 2030 ED 036 045
Publ. Date Feb 69 123p.
Freiheit, Susan Gretchen
The Effects of a Training Program Upon the Creative Performance of Fourth Grade Children; Report from the Project on Task and Training Variables in Human Problem Solving

and Creative Thinking.
Wisconsin University, Madison, Research And Development Center For Cognitive Learning
Office Of Education (DHEW), Washington, D. C., Cooperative Research Program
EDRS mf,hc
OEC-5-10-154 TR-79

Descriptors: creativity research; creative thinking; creative development; workbooks; creative ability; instructional materials; teaching methods; program evaluation; creativity; Stretch Workbook

To determine if use of a creativity training workbook (Stretch) would increase creative performance, 45 fourth grade pupils were studied. The students were divided into control and experimental groups with half high (mean IQ 113) and half normal (mean IQ 101) ability with the controls using a placebo workbook and the experimentals using the Stretch workbook. The data upon pre- and posttesting with the Torrance Tests of Creative Thinking revealed no significant differences between the two groups. However, the author felt from analysis and informal observation that Stretch did improve verbal originality, certain scores of the lower ability group improved more than the higher ability group, and all students improved significantly on almost all measures. The author indicates that the workbook has the potential to be helpful in creativity training. (JM)

ABSTRACT 22094

EC 02 2094 ED 033 105
Publ. Date (69) 99p.
Skipper, Charles E.
A Study of the Development of Creative Abilities in Adolescence.
EDRS mf
Project Director, Living Arts Program, 612 Linden Avenue, Dayton, Ohio 45403 ($3.00).

Descriptors: exceptional child research; gifted; creative ability; creative development; creativity research; cultural enrichment; fine arts; originality; personality development; talent development; teaching methods; Living Arts Program

The purpose of this study, sponsored by an ESEA Title III grant, was to evaluate the effectiveness of the Living Arts Program in developing creative behavior in adolescents. The subjects consisted of an experimental group of 188 students in grades 7-10 who took part in the Living Arts Program for one semester and a similar group of students who did not. Each group was divided into high, middle, and low levels of creativity on the basis of scores on a Things Done On Your Own Checklist. The data obtained from tests given to these students in October 1967 and January 1968 led to the following conclusions: females in the experimental group increased their aesthetic sensitivity and engaged in significantly more independent creative activities than did those in the control group; males and females in the experimental groups participated more actively in community cultural activities than did those in the control group, and increased significantly their creative thinking; students in the experimental group reported a positive self concept and believed themselves to have considerable imagination, curiosity, and creative personal qualities. The findings appeared to substantiate the theory that deliberate efforts to improve certain types of creative behavior can be successful. (MP)

ABSTRACT 22225

EC 02 2225 ED 037 877
Publ. Date 69 32p.
Duncan, Ann Dell Warren
Behavior Rates of Gifted and Regular Elementary School Children. National Association for Gifted Children Monograph.
Kansas University, Lawrence, Bureau Of Child Research
Office Of Education (DHEW), Washington, D. C.;
National Institute Of Neurological Diseases And Blindness (DHEW), Washington, D. C.;
National Institute Of Child Health And Human Development, Bethesda, Maryland
EDRS mf,hc

Descriptors: exceptional child research; gifted; task performance; timed tests; reaction time; behavior; elementary school students; cognitive processes; performance tests; behavior rates

To determine whether gifted children are faster than average students on all behaviors sampled or only on academic subjects, 46 gifted and 30 average children were tested. The time rates for tapping, walking, reading, answering, and calculating were determined. All children were from grades 4 through 6; median IQ of the gifted was 138, and for the average 110. The results were that some gifted rates were similar to the average performance, but generally the gifted performed significantly faster on both academic and non-academic behaviors. Also the higher the grade level the faster the behavior, and the correlations between academic rates and achievement scores, non-academic rates, and intelligence test scores are all beyond the .005 level of significance. The conclusion is that study should be made to determine whether accelerating behavior rates could increase abilities and giftedness. (JM)

ABSTRACT 22538

EC 02 2538 ED 038 808
Publ. Date Oct 69 32p.
Steele, Joe M.
Dimensions of the Class Activities Questionnaire.
Illinois University, Urbana, Center For Instructional Research And Curriculum Evaluation
Illinois State Office Of The Superintendent Of Public Instruction, Springfield
EDRS mf,hc

Descriptors: exceptional child research; gifted; teacher evaluation; questionnaires; evaluation techniques; student attitudes; student reaction; class management; classroom techniques; cognitive objectives; teaching quality; teacher behavior; teaching methods; special classes; cognitive processes; class activities questionnaire

Developed to assess congruence of intent and practice (the teacher's ideal and students' perceived real) in instruction of the gifted in the Illinois program, the Class Activities Questionnaire (CAQ) includes 25 forced choice items evaluating cognitive emphasis, classroom conditions, and student attitudes and reactions. Cognitive items were shown to be consistently identified with the appropriate level of the taxonomy of intellectual abilities. Field testing indicated that the CAQ could be used with grade 6 and above. Intercorrelation, factor, and reliability analyses demonstrated the CAQ to be an adequate instrument. Scoring procedures and interpretation are explained for each of the three areas evaluated. (JD)

ABSTRACT 22610

EC 02 2610 ED N.A.
Publ. Date 64 156p.
Stephens, Thomas M., Ed.; Gibson, Arthur R., Ed.
Pathways to Progress: A Research Monograph from Ohio's Programs for the Gifted Child.
EDRS not available
Division Of Special Education, State Department Of Education, Columbus, Ohio 43215.

Descriptors: exceptional child research; gifted; teacher attitudes; elementary school teachers; questionnaires; ability grouping; elementary school students; social relations; achievement; individual characteristics; underachievers; incidence; intelligence tests; individual tests; group intelligence tests; followup studies; creative thinking; mathematics education; English education; programed instruction; Ohio

Research studies sponsored by the Ohio Department of Education and conducted by university personnel, public school personnel, and local school systems are reported. The eleven studies treat the following topics: attitude-information inventory of elementary teachers at beginning and end of a special project on the gifted, social relations of gifted elementary school children in regular and ability grouped classes, family and personal dynamics associated with school achievement of the gifted, frequency of underachievement in elementary pupils with high aptitude, use of individual intelligence tests to verify giftedness, consistency in group intelligence test scores of gifted, follow-up of high ability-high achieving secondary school graduates, creative thinking tasks as measures of academic potential with special reference to work of Getzels and Jackson, college opinions of high school mathematics programs, effectiveness of a programed learning English course, and evaluation of a project for gifted children in a county school system. (MS)

ABSTRACT 22711

EC 02 2711 ED 039 653
Publ. Date Dec 67 57p.
Goldman, Ronald J.; Torrance, E. Paul
Creative Development in a Segregated Negro School in the South.
Georgia University, Athens, College Of Education
Office Of Education (DHEW), Washington, D. C., Cooperative Research Program
EDRS mf,hc

Descriptors: exceptional child research; creative development; Negro students; cultural factors; creative ability; Negro education; Negro culture; elementary school students; culturally disadvantaged; testing

Designed to examine the cultural influences on creative development, the study analyzed imaginative stories by students from a segregated Negro school in Georgia and from a middle class white school in Minnesota. The stories were evaluated in terms of originality, interest, style, and pressures of divergency and conformity. The students were further compared by teacher ratings and by performances on the Verbal Creative Thinking Task. Statistical data is provided for the results showing poorer creative ability among the Negro students, and implications regarding cultural causation are indicated. (RD)

ABSTRACT 22790

EC 02 2790 ED 032 085
Publ. Date Feb 69 142p.
Wallach, Michael A.; Wing, Cliff W., Jr.
The Talented Student: A Validation of the Creativity--Intelligence Distinction.
EDRS not available
Holt, Rinehart And Winston, Inc., 383 Madison Avenue, New York, New York 10017 ($3.95).

Descriptors: exceptional child research; gifted; creativity; intelligence; achievement; academic achievement; creative activities; individual activities; science activities; leadership; art activities; creative writing; creative thinking; grades (scholastic); personal adjustment; productive thinking; originality; cocurricular activities

The relationship between intelligence and creativity was studied in 503 college students. Scholastic Aptitude Test scores were averaged to determine intelligence; tasks were designed to measure number and uniqueness of ideas. High school and freshman college grades indicated academic accomplishment; student questionnaires rated talented nonacademic accomplishment in aesthetic, scientific, and social areas. Results indicated that high intelligence was linked with higher grades but was unrelated to nonacademic accomplishment. Ideational output was related to both academic and nonacademic accomplishment generally, ideational uniqueness was not pivotal in nonacademic accomplishment. In interviews, students with high ideational productivity manifested the highest degree of competence at self initiated activities. (JD)

ABSTRACT 22802

EC 02 2802 ED N.A.
Publ. Date Mar 70 28p.
Roweton, William E.
Creativity: A Review of Theory and Research. Theoretical Paper No. 24.
Wisconsin University, Madison, Research And Development Center For Cognitive Learning
Office Of Education (DHEW), Washington, D. C.
EDRS not available
OEC-5-10-154
Research And Development Center For Cognitive Learning, University Of Wisconsin, Madison, Wisconsin 53706.

Descriptors: exceptional child education; literature reviews; creativity; creative thinking; creativity research; theories; teaching methods

In this review of literature on creativity, interpretations or explanations of creative thinking are grouped into five categories: definitional approaches, dispositional or personality based theories, psychoanalytic viewpoints, behavioristic theories, and operational approaches. Other programs, procedures, and courses are discussed. Also reviewed is literature concerned with programs and procedures for creativity in the classroom. The current status of theory in creativity is explored. Over 300 references are listed. (MS)

ABSTRACT 22867

EC 02 2867 ED 040 519
Publ. Date 69 208p.
Bent, Leo G. And Others
Grouping of the Gifted: An Experimental Approach.
Bradley University, Peoria, Illinois
Illinois State Office Of The Superintendent Of Public Instruction, Springfield
EDRS mf,hc

Descriptors: exceptional child research; gifted; grouping (instructional purposes); student development; enrichment programs; enrichment activities; program descriptions; program evaluation; experimental programs

While in 3rd grade, 487 students were selected for placement in special classes for the gifted from grades 4 through 8. Teachers of the special classes were chosen by school administrators. Their teaching experience averaged 9 years, and eight held advanced degrees. Sixteen attended special summer programs on the gifted and were given inservice assistance. Results indicated that the program children equalled or surpassed the controls in academic achievement as measured by standardized tests despite the fact that their supplementary enriching activities reduced by about one half the time spent on regular classroom activities. Further results indicated skill in foreign language, research, and critical thinking as well as growth in social awareness and concern, leadership, creativity, interests, and self reliance in school activities. Approval of the program by both teachers and parents was noted. (Author/JD)

ABSTRACT 22892

EC 02 2892 ED 040 544
Publ. Date Nov 69 172p.
Bahlke, Susan J. And Others
Componential Evaluation of Creativity Instructional Materials. Final Report.
Purdue University, Lafayette, Indiana
Office Of Education (DHEW), Washington, D. C., Bureau Of Research
EDRS mf,hc
OEG-0-8-070205-3473
BR-7-E-205
A Doctoral Thesis Prepared By The Author And Presented To The Faculty Of Purdue University.

Descriptors: exceptional child research; material development; creativity; creative thinking; language development; problem solving; language ability; audiovisual aids; learning activities, intermode differences; instructional materials

Instructional materials designed to increase creative thinking abilities and language achievement were used in nine training conditions with children in grades 4, 5, and 6. Results indicated that treatment conditions were most effective at the 4th grade level, where at least one treatment was effective for all variables. At the 5th grade, two variables, verbal fluency and verbal originality, were unaffected. The materials were least effective at the 6th grade, where gains occurred on only three variables: nonverbal fluency, nonverbal flexibility, and verbal originality. At all grade levels, treatment conditions were generally more effective when involving either exercise or single component conditions. (Author/JD)

ABSTRACT 23024

EC 02 3024 ED N.A.
Publ. Date 65 20p.
Gallagher, James J.
Research Trends and Needs in Educating the Gifted. A Critique.
Office Of Education (DHEW), Washington, D. C.
EDRS not available
United States Government Printing Office, Division Of Public Documents, Washington, D. C. 20402.

Descriptors: exceptional child research; gifted; cognitive development; culturally disadvantaged; research needs; research methodology; educational environment

Reported is a critique of conference proceedings considering present trends and future needs in the education of the gifted. Discussions include methods of defining giftedness, cognitive styles, underachievement, sex differences, ego development, the social environment, and the culturally disadvantaged. Also of concern are the educational environment; research strategies including coordination, longitudinal studies, test development, systematic intervention, and a data bank; and problems of dissemination and ethics in research work. (JM)

ABSTRACT 23180

EC 02 3180 ED N.A.
Publ. Date 63 32p.
Torrance, E. Paul
Creativity. What Research Says to the Teacher.
National Education Association, Department Of Classroom Teachers, Washington, D. C.
EDRS not available
National Education Association, 1201 Sixteenth Street, N. W., Washington, D. C. 20036 ($0.25).

Descriptors: creativity; creative development; creative teaching; teaching techniques

The author drew from over 500 research reports on creative thinking to compile the most valuable items for classroom teachers, emphasizing positive aspects rather than gaps in knowledge. Creativity is defined, and its manifestations and the means of measuring creative thinking abilities at educational levels from preschool to college are mentioned. Patterns of development of creative abilities and creative ways of learning are discussed. Specific ideas offer suggestions to a teacher for providing opportunities for creative behavior. Also considered are common blocks to creative development, how teachers can increase their own creativity, and goals in guiding creativity. (KW)

ABSTRACT 23183

EC 02 3183 ED N.A.
Publ. Date 61 92p.
Anderson, Kenneth E.
Research on the Academically Talented Student.
Carnegie Corporation, New York; National Education Association, Washington, D. C.
EDRS not available
National Education Association, 1201 Sixteenth Street Northwest, Washington, D. C. 20036 ($1.00).

Descriptors: exceptional child research; gifted; research reviews (publications); educational research; research methodology

A report designed to provide assistance to school personnel responsible for research on the education of academically talented students is the result of a conference on such research as part of the NEA Project on the Academically Talented Student. Basic assumptions and procedural safeguards related to design, variety of procedures, and evaluation of data are suggested. School-initiated and teacher-initiated research are discussed, and various organizations and projects concerned with research on the academically talented are described. Research is reviewed as illustrative of sound procedure and recommended technique in the areas of individual characteristics (developmental studies, the structure of intellect, cultural factors, personal factors), educational practice (general surveys, administrative provisions, course content and method), and research status and needs (coordination and content). A bibliography is included. (KW)

ABSTRACT 23186

EC 02 3186 ED 003 182
Publ. Date 65 402p.
Drews, Elizabeth M.
Being and Becoming: A Cosmic Approach to Counseling and Curriculum, Part 2: The Creative Intellectual Style in Gifted Adolescents.
Michigan State University, East Lansing
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc
O-E-G-7-32-0410-140
NDEA-VIIA-647-NO-2- 8

Descriptors: exceptional child research; personality; gifted; grade 9; creativity research; critical thinking; critical reading; growth patterns; changing attitudes; student attitudes; student interests; values; audiovisual aids; testing

A study was made to describe and to discover possible ways of influencing intellectual and personality development in ninth grade, gifted youth. The report, second in a three-part study, reviewed the results of an experimental program designed especially to produce changes in attitudes, interests, and values toward creative intellectual norms. The investigation centered on two distinctive patterns: the creative intellectual style and the feminine dimension. Formal and informal measures of creative intellectual attitudes were administered to both experimental and control groups. The experimental group was found to be higher than the control group at posttesting in originality, complexity, aestheticism, theoretical orientation, and philosophical contemplation. It was concluded that attitude change could be brought about through special efforts. (GD)

ABSTRACT 23187

EC 02 3187 ED 003 253
Publ. Date 65 215p.
Wallach, Michael A.; Kogan, Nathan
Cognitive Originality, Physiognomic Sensitivity, and Defensiveness in Children. Final Report.
Duke University, Durham, North Carolina
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc
CRP-1316-B

Descriptors: exceptional child research; creativity; cognitive processes; test construction; observation; personality; cognitive ability; originality; creativity research; sex differences; intelligence level; psychological characteristics; individual differences

An examination was conducted to determine if a child's ability to create (cognitive originality) is independently associated with his general level of intelligence, and if so, to study psychological correlates that distinguish individual differences on the creativity and intelligence dimensions when considered jointly. Instruments, covering both verbal and visual formats, were developed and administered to over 150 fifth grade children in a gamelike context without time pressure. These required the children to generate various kinds of associates with given task requirements. Each child determined uses for particular objects, ways in which particular objects were similar, and things that particular patterns represented to them. Intelligence information was obtained through the use of a standard test battery. Correlations between the creativity and intelligence measures were found to be extremely low. The subjects were then isolated by sex into one of four groups: high creativity, high intelligence; high creativity, low intelligence; low creativity, high intelligence; and low creativity, low intelligence. Differences among these groups were studied in four areas of cognitive functioning: behavior as observed in school and play settings; activities in categorizing and conceptualizing; sensitivity to psychiognomic properties of environment; and personality dispositions, indicated through self description and through fantasy. Abundant and unique associations were found to exist. The research indicated the importance of jointly studying variations in creativity and general intelligence, if understanding of creativity is to be furthered. (JH)

ABSTRACT 23188

EC 02 3188 ED 003 829
Publ. Date 65 139p.
Ringness, Thomas A.
Nonintellective Variables Related to Academic Achievement of Bright Junior High School Boys.
Wisconsin University, Madison
Office Of Education (DHEW), Washington, D. C.
EDRS mf,hc
CRP-S-035

Descriptors: exceptional child research; gifted; personality; achievement; tests; males; low achievers; students; high achievers; psychological patterns; adjustment (to environment); student problems; student research; student motivation; student interests; junior high schools; motivation

In previous studies, personality variables, such as adjustment, motive to achieve, motive to affiliate, acceptance of self and others, and acceptance of adult values, have been studied to determine their relationships to school achievement. Interrelationships among these variables were examined in this study. The California Test of Mental Maturity was used to select boys from grade 8, and the Wechsler Intelligence Scale for Children was used to confirm selection. The 264 students were interviewed and tested with the California Psychological Inventory, Bills Index of Adjustment and Values, and a card sort. Grade point averages were obtained and the Iowa Test of Basic Skills was administered. The high and low thirds of the group were tested using Dunn's Visual Discrimination Task, Thematic Apperception Test, and McClelland's Projective Test. Results showed that low achievers do not have as close ties with home nor do they accept conventional

values as much as do high achievers. The various measures tended to confirm each other in measurement of variables. Findings confirmed many findings of earlier studies of nonintellective characteristics of high and low achieving bright pupils. This confirmation suggests that future research should attempt to modify certain student characteristics both in the laboratory and in the field. (AL)

ABSTRACT 23241

EC 02 3241 ED 010 998
Publ. Date 66 50p.
Sands, Theodore And Others
Concept Development Materials for Gifted Elementary Pupils. Final Report of Field Testing.
Illinois State University, Normal
EDRS mf,hc

Descriptors: exceptional child research; gifted; instructional materials; sciences; elementary school students; science materials; ungraded programs; concept formation; elementary school science; independent study; science tests; evaluation

An analysis of a field test of science learning materials for able elementary students is reported. The learning materials field tested and evaluated were ungraded independent study kits, designed for maximum suitability regardless of teacher or school circumstances. The learning materials involved concept formation in the topics of atoms, molecules, and measurement. A total of 259 students from 31 different Illinois schools used the materials. Students in the study were selected by their teachers and administrators. Methods of using the materials were established by the teachers. Pretests and posttests were administered to the students. Results are reported for each test item and each grade level, and the authors conclude that the learning materials tested can be used effectively, with greater success predicted for grades 2 and 3 than for grades 1 and 4. (RS)

ABSTRACT 23247

EC 02 3247 ED 011 070
Publ. Date Mar 67 190p.
McClain, John D.; Kovacs, Frank W.
Programed Instruction for Superior Students in Small High Schools.
Clarion State College, Pennsylvania
Office Of Education (DHEW), Washington, D. C., Bureau Of Research
EDRS mf,hc
OEC-4-16-026 NDEA-V11B-451-1
BR-5-0706-1

Descriptors: exceptional child research; gifted; programed instruction; program evaluation; measurement techniques; innovation; rural schools; rural environment; high schools; demonstration projects; newsletters; information dissemination; secondary school students; parent school relationship; community support; Attitude toward Programed Instruction Inventory; Semantic Differential Scale

Superior students in rural high schools were given programed instruction in selected subject areas to determine whether a nondirective method of diffusing an innovation, like programed instruction, was appropriate for dissemination in a rural environment. The effects of the cooperative demonstration project on students, parents, teachers, and high school administrators were measured by the Attitude toward Programed Instruction Inventory and the Semantic Differential Scale. Results showed that predisposition of the individual to either adoption or rejection will affect the rate and final decision regarding the acceptance or rejection of the innovation. It was recommended that premeasures should be employed to determine the predisposition of the target population, and it was concluded that the nondirective method of diffusing an innovation was appropriate for the dissemination of programed instruction in a rural environment. Since the use of newsletters proved to be an important contribution to the success of the project, the use of similar means of communication with the target audience is advised when dissemination is an objective. (GD)

ABSTRACT 23289

EC 02 3289 ED N.A.
Publ. Date 65 72p.
Goldberg, Miriam L.
Research on the Talented. HMLI Pamphlets.
Horace-Mann-Lincoln Institute Of School Experimentation, New York
EDRS not available
Bureau Of Publications, Teachers College, Columbia University, West 120th Street, New York, New York 10027.

Descriptors: exceptional child education; gifted; research reviews (publications); intelligence; creativity; underachievers; educational methods; academically gifted

Recent findings concerning the education of superior students are compared with past research in this area. Examination was made of current projects in relation to perennial unsolved problems and with new or uncharted concerns. Social and personal characteristics, identification of the superior student, and intellectual and motivational factors are reviewed. In addition, the discrepancy between prediction and achievement (underachievers), administrative and guidance provisions, course content and method, and current trends and concerns for schools are examined. a selected bibliography on education of the talented, arranged by topic, is included. (KW)

ABSTRACT 23298

EC 02 3298 ED 036 155
Publ. Date Feb 68 156p.
(The Effect of Individually Prescribed Instruction on the Independent Behavior of Gifted Children in Two Schools in the Elk Grove School District.)
Research For Better Schools, Inc., Philadelphia, Pennsylvania
Office Of Education (DHEW), Washington, D. C., Bureau Of Research
EDRS mf,hc
OEC-1-7-062867-3053
BR-6-2867

Descriptors: exceptional child research; gifted; individualized instruction; independent study; parent attitudes; student attitudes; teacher attitudes; Individually Prescribed Instruction

In addition to rating the independent behavior of gifted children in the Individually Prescribed Instruction (IPI) program, this study also attempts to measure the attitude of children, parents, and teachers toward the IPI program. The report discusses the rationale behind IPI, the school population in the study and control schools, and the research methodology of the study. The conclusions reached are summarized and some recommendations are offered. Appendixes include the materials used to conduct the study. (JY)

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